



EEL4744: Microprocessor Applications

Textbook (ISBN: 0195371615 or 9780195371611)

- **Textbook:** F. Cady, *Microcontrollers and Microcomputers Principles of Software and Hardware Engineering*, Second Edition, Oxford University Press, New York, NY, 2009, ISBN13: 9780195371611, ISBN10: 0195371615. This is a **paperback** book.
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Digilent Analog Discovery 2 (DAD)

- The **DAD** (**D**igilent **A**nalog **D**iscovery) is required for many UF EE & CpE courses
 - > Digilent (www.digilent.com) created the boards and still sells them, but they sometimes do not have them available for general purchase.
- I made a deal to make them available to UF students for \$279 (at the bookstore, while supplies last).
 - > Although now available (at least today) at Digilent, they have been sold out at prices less than \$399 several times over the last two years, **except at UF!**

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Digilent Analog Discovery 2 (DAD)

- **DAD** is now required in many EE & CpE courses
 - > The DAD has the following functions:
 - 2-Channel O'scope (1M Ω , \pm 25V diff, 5MHz bandwidth, 100Msample/sec)
 - 2-Channel Waveform Generator (22 Ω , \pm 5V, 14 bit, and last 2 above specs)
 - 16-Channel Logic Analyzer and Digital Pattern Generator
 - \pm 5VDC Power Supplies (+5V at 50mA, -5V at 50mA)
 - Spectrum Analyzer (3.3V CMOS, 100Msample/sec)
 - Network Analyzer (Bode, Nyquist, Nichols; 1Hz-10MHz)
 - Voltmeter (AC, DC, \pm 25V), Digital I/O
 - Digital Bus Analyzers (SPI, I2C, UART, Parallel)
- We will use it in most of our labs and DURING Practicals 1 and 2



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Manuals and Software

- Microchip/Atmel manuals (from our website and/or Microchip website)
 - >The below **FREE** manuals will be used regularly in the course. A few others will also be used. Get them **ASAP**.
 - https://mil.ufl.edu/4744/docs/XMEGA/doc8331_%20XMEGA_AU_Manual.pdf
 - https://mil.ufl.edu/4744/docs/XMEGA/doc8385_ATxmega128A1U_Manual.pdf
 - https://mil.ufl.edu/4744/docs/XMEGA/doc0856_AVR_Instruction_Set.pdf
- Software
 - >Microchip/Atmel Studio 7.0 (also **FREE**)
 - An integrated development environment (IDE) for developing and debugging Atmel ARM® Cortex™-M processor-based and Atmel AVR® microcontroller applications (including our XMEGA)
 - See the Microchip Studio 7.0 Installation Tutorial at
 - https://mil.ufl.edu/4744/docs/Install_Atmet_Studio_7.0.pdf



EEL4744: Microprocessor Applications Announcements (Action Items)

- Hardware purchases
 - >Parts paid for with your lab fee (\$121)
 - The UF-specified boards designed by *Out of the Box Robotics*, <http://ootbrobotics.com/>
 - >DAD (Digilent Analog Discovery) [**Required**]
 - \$279, while supplies last, at UF Bookstore
 - >You **might** need: USB Port Expander, speaker(s)
 - 3 USB Ports: 1 for μPAD, 1 for DAD, 1 for 3701 (or 4712) PLD
 - No earbuds or headphones allowed in Honorlock (so you might need a cheap speaker)
- Textbook purchase (*not required*)
 - > Can/should be shared (if social-distancing allows)
 - > Buy it **used**